

## Supplementary tables

Supplementary table 1. Target analytes with detection rate and abbreviations used

Target analytes		Detection rate	Abbreviations
Organochlorine (OC) Pesticides			
Hexachlorobenzene		100%	
$\beta$ -Hexachlorocyclohexane		98%	
$\gamma$ -Hexachlorocyclohexane (Lindane)		87%	
Oxychlordane		99%	
Trans-Nonachlor		100%	
2,2-Bis(4-chlorophenyl)-1,1-dichloroethene		100%	P,p'-DDE
2-(4-chlorophenyl)-2-(2-chlorophenyl)- 1,1,1-trichloroethane		44%	O,p'-DDT
2,2-Bis(4-chlorophenyl)-1,1,1-trichloroethane		100%	P,p'-DDT
Mirex		75%	
Polychlorinated Biphenyl (PCB) congener			
2,4,4'-trichlorobiphenyl		9%	PCB28
2,2',3,5,5'-tetrachlorobiphenyl		14%	PCB44
2,2',4,5'-tetrachlorobiphenyl		7%	PCB49
2,2',5,5'-tetrachlorobiphenyl		33%	PCB52
2,3',4,4'-tetrachlorobiphenyl		63%	PCB66
2,4,4',5-tetrachlorobiphenyl		100%	PCB74
2,2',3,4,5'-pentachlorobiphenyl		78%	PCB87
2,2',4,4',5-pentachlorobiphenyl		100%	PCB99
2,2',4,5,5'-pentachlorobiphenyl		58%	PCB101
2,3,3',4,4'-pentachlorobiphenyl		100%	PCB105
2,3,3',4',6-pentachlorobiphenyl		49%	PCB110
2,3',4,4',5-pentachlorobiphenyl		100%	PCB118
2,2',3,3',4,4'-hexachlorobiphenyl		50%	PCB128
2,2',3,4,4',5'-hexachlorobiphenyl	and	2,3,3',4,4',6-	100% PCB138-158
hexachlorobiphenyl			
2,2',3,4',5,5'-hexachlorobiphenyl		96%	PCB146
2,2',3,4',5',6-hexachlorobiphenyl		60%	PCB149
2,2',3,5,5',6-hexachlorobiphenyl		58%	PCB151
2,2',4,4',5,5'-hexachlorobiphenyl		100%	PCB153
2,3,3',4,4',5-hexachlorobiphenyl		100%	PCB156
2,3,3',4,4',5'-hexachlorobiphenyl		98%	PCB157
2,3',4,4',5,5'-hexachlorobiphenyl		95%	PCB167
2,2',3,3',4,4',5-heptachlorobiphenyl		100%	PCB170
2,2',3,3',4,5,5'-heptachlorobiphenyl		64%	PCB172
2,2',3,3',4',5,6-heptachlorobiphenyl		97%	PCB177
2,2',3,3',5,5',6-heptachlorobiphenyl		94%	PCB178
2,2',3,4,4',5,5'-heptachlorobiphenyl		100%	PCB180
2,2',3,4,4',5',6-heptachlorobiphenyl		100%	PCB183
2,2',3,4',5,5',6-heptachlorobiphenyl		100%	PCB187
2,3,3',4,4',5,5'-heptachlorobiphenyl		48%	PCB189
2,2',3,3',4,4',5,5'-octachlorobiphenyl		99%	PCB194
2,2',3,3',4,4',5,6-octachlorobiphenyl		94%	PCB195
2,2',3,3',4,4',5',6-octachlorobiphenyl	and	2,2',3,4,4',5,5',6-	100% PCB196-203
octachlorobiphenyl			
2,2',3,3',4,5,6,6'-octachlorobiphenyl		100%	PCB199
2,2',3,3',4,4',5,5',6-nonachlorobiphenyl		100%	PCB206
2,2',3,3',4,4',5,5',6,6'deacachlorobiphenyl		97%	PCB209
Polybrominated Diphenyl Ether (PBDE) congeners			
2,2',4- tribromodiphenyl ether		3%	PBDE-17
2,4,4'-tribromodiphenyl ether		5%	PBDE-28

2,2',4,4'-tetrabromodiphenyl ether	11%	PBDE-47
2,3',4',4'-tetrabromodiphenyl ether	2%	PBDE-66
2,2',3,4,4'-pentabromodiphenyl ether	8%	PBDE-85
2,2',4,4',5-pentabromodiphenyl ether	9%	PBDE-99
2,2',4,4',6-pentabromodiphenyl ether	19%	PBDE-100
2,2',4,4',5,5'-hexabromodiphenyl ether	100%	PBDE-153
2,2',4,4',5,6'-hexabromodiphenyl ether	6%	PBDE-154
2,2',3,4,4',5',6-heptabromodiphenyl ether	12%	PBDE-183
Polybrominated Biphenyl (PBB) congener		
2,2',4,4',5,5'-hexabromobiphenyl	100%	PBB-153

\* : POPs with detection rate  $\geq 75\%$  were included in final analyses

Supplementary table 2. Adjusted\* odds ratios of incident diabetes according to quartiles of lipid-standardized organochlorine pesticides, polychlorinated biphenyl (PCB), or polybrominated biphenyl (PBB)

		Quartiles			
		Q1	Q2	Q3	Q4
<b>OC pesticides</b>					
Oxychlordane	Ref.	2.8 (1.1-6.9)		1.6 (0.6-4.0)	2.2 (0.8-5.7)
<i>Trans</i> -nonachlor	Ref.	2.2 (0.9-5.3)		0.9 (0.3-2.2)	1.8 (0.7-4.5)
Hexachlorobenzene	Ref.	0.6 (0.2-1.3)		0.4 (0.2-0.9)	1.0 (0.4-2.3)
$\beta$ -hexachlorocyclohexane	Ref.	0.5 (0.2-1.4)		0.8 (0.3-1.9)	0.8 (0.3-2.0)
$\gamma$ - hexachlorocyclohexane	Ref.	0.7 (0.3-1.7)		0.7 (0.3-1.6)	1.0 (0.4-2.3)
P,p'-DDE	Ref.	0.6 (0.2-1.4)		0.9 (0.4-2.0)	0.4 (0.2-1.1)
P,p'-DDT	Ref.	0.9 (0.4-2.2)		0.6 (0.3-1.6)	1.0 (0.4-2.6)
Mirex	Ref.	2.6 (1.0-6.7)		1.0 (0.4-2.6)	2.1 (0.8-5.2)
PCBs (number of chlorines)					
PCB74 (4)	Ref.	2.0 (0.8-5.0)		0.9 (0.3-2.6)	1.7 (0.6-4.4)
PCB87 (5)	Ref.	1.4 (0.6-3.5)		1.0 (0.4-2.4)	0.7 (0.3-1.7)
PCB99 (5)	Ref.	0.8 (0.3-1.9)		0.6 (0.2-1.5)	1.1 (0.4-2.5)
PCB105 (5)	Ref.	0.6 (0.2-1.5)		0.7 (0.3-1.7)	0.5 (0.2-1.2)
PCB118 (5)	Ref.	0.3 (0.2-1.0)		0.8 (0.4-2.0)	0.5 (0.2-1.3)
PCB146 (6)	Ref.	1.3 (0.5-3.2)		0.7 (0.3-2.0)	1.1 (0.4-3.0)
PCB153 (6)	Ref.	0.9 (0.4-2.2)		0.6 (0.2-1.6)	0.8 (0.3-2.1)
PCB156 (6)	Ref.	1.2 (0.5-3.0)		0.6 (0.2-1.6)	1.0 (0.4-2.8)
PCB157 (6)	Ref.	0.5 (0.2-1.3)		0.6 (0.2-1.7)	0.4 (0.2-1.3)
PCB138-158 (6)	Ref.	1.0 (0.4-2.3)		0.7 (0.3-1.9)	1.0 (0.4-2.4)
PCB167 (6)	Ref.	0.8 (0.4-2.0)		0.6 (0.2-1.6)	0.6 (0.2-1.7)
PCB170 (7)	Ref.	1.9 (0.8-4.6)		0.6 (0.2-1.9)	1.3 (0.4-3.8)
PCB178 (7)	Ref.	1.1 (0.5-2.7)		0.5 (0.2-1.4)	0.9 (0.3-2.3)
PCB180 (7)	Ref.	2.2 (0.9-5.5)		0.6 (0.2-1.5)	1.1 (0.4-3.1)
PCB183 (7)	Ref.	1.6 (0.7-3.9)		0.6 (0.2-1.8)	1.1 (0.4-2.9)
PCB187 (7)	Ref.	1.3 (0.5-3.2)		0.7 (0.3-1.9)	1.0 (0.4-2.5)
PCB194 (8)	Ref.	1.2 (0.5-3.0)		0.5 (0.2-1.4)	0.5 (0.2-1.6)
PCB195 (8)	Ref.	1.7 (0.7-4.0)		0.5 (0.2-1.6)	0.7 (0.3-2.0)
PCB199 (8)	Ref.	1.0 (0.4-2.3)		0.4 (0.1-1.1)	0.6 (0.2-1.7)
PCB196-203 (8)	Ref.	1.6 (0.6-3.9)		0.6 (0.2-1.8)	0.9 (0.3-2.8)
PCB206 (9)	Ref.	0.5 (0.2-1.3)		0.6 (0.2-1.6)	0.6 (0.2-1.7)
PCB209 (10)	Ref.	1.7 (0.7-4.1)		0.6 (0.2-1.7)	0.7 (0.2-2.2)
<b>PBB</b>					
PBB153	Ref.	2.7 (1.0-7.1)		1.8 (0.6-5.1)	1.8 (0.6-5.3)

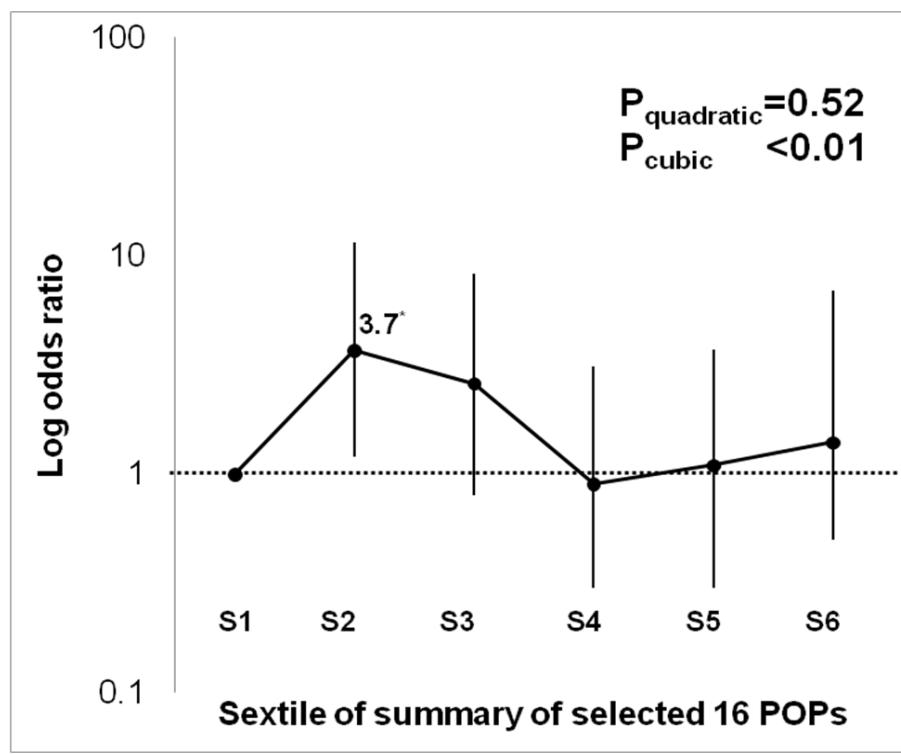
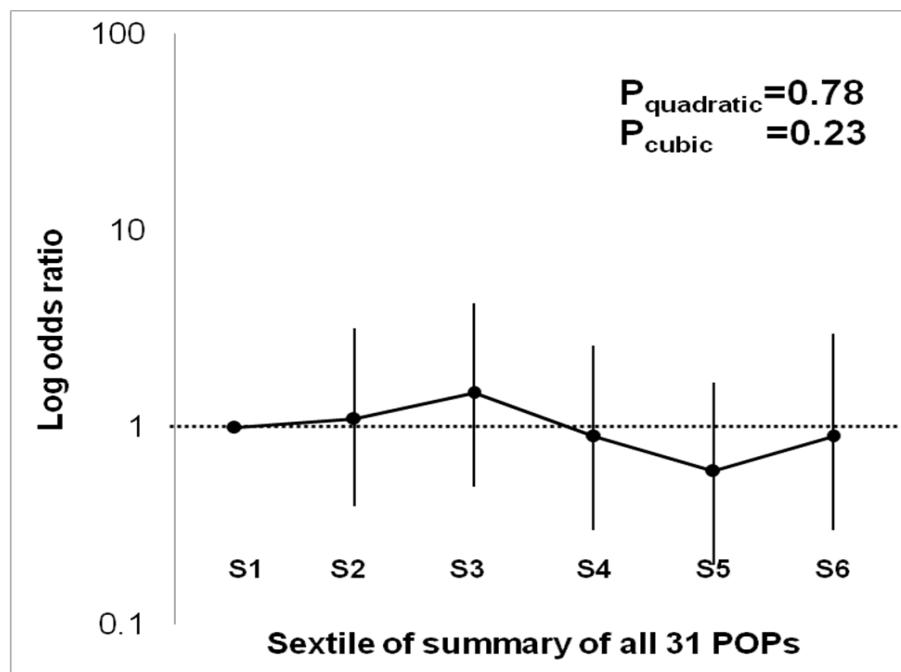
\* : Adjusted for age, sex, race, and BMI at year 2

Supplementary table 3. Adjusted\* odds ratios (OR) of incident diabetes according to quartiles or sextiles of summary measures of lipid-standardized persistent organic pollutants (POPs)

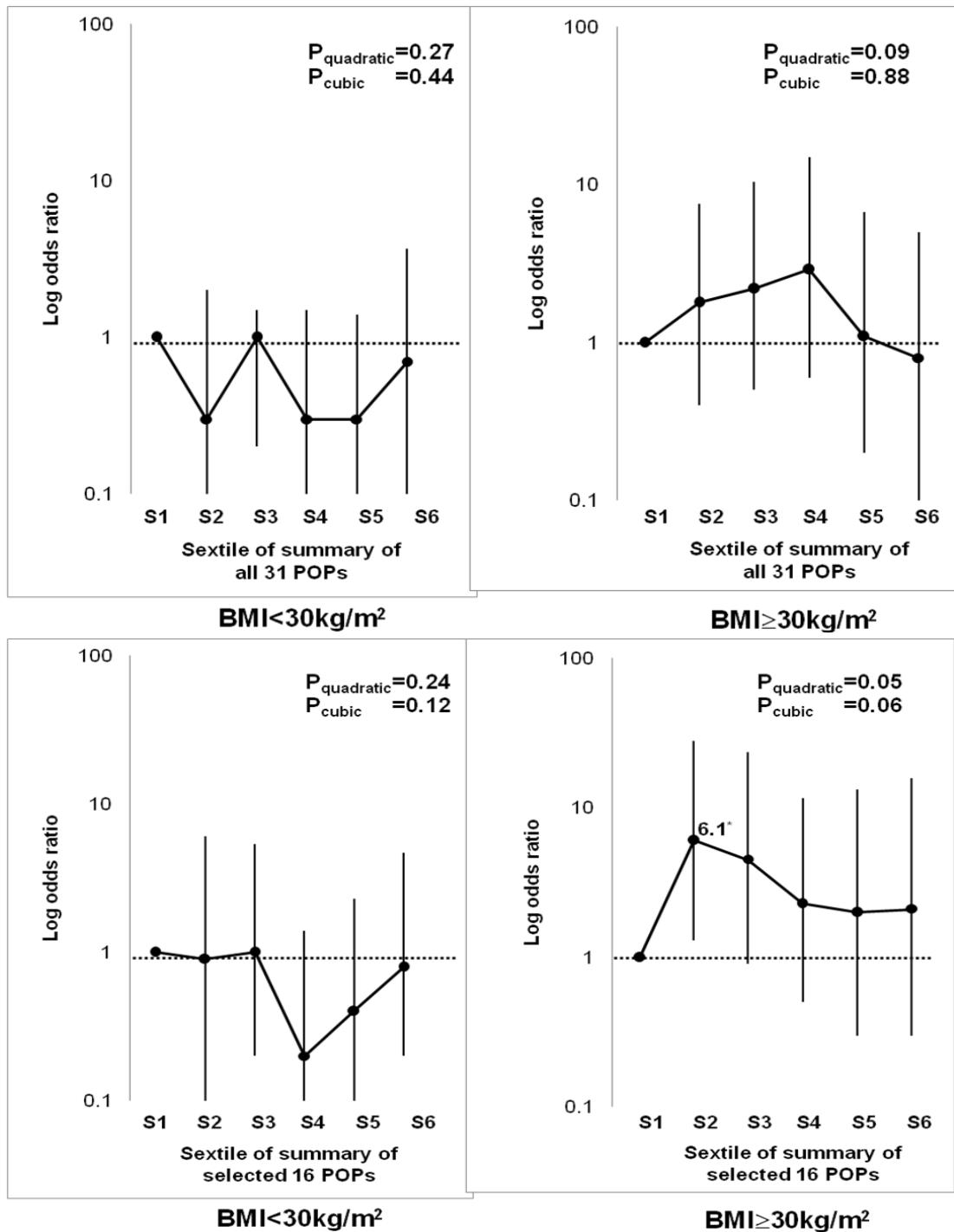
All 31 POPs in Tables 3 and 4 (in the main manuscript)

	Q1 Ref.	Q2 S1	Q3 S2	Q4 S3		P <sub>quadratic</sub> 0.87	P <sup>†</sup> <sub>cubic</sub> 0.17
		1.4(0.6-3.4)	0.7(0.3-1.7)	0.9(0.3-2.3)			
		S1 Ref.	S2 1.1(0.4-3.2)	S3 1.5(0.5-4.3)	S4 0.9(0.3-2.6)	S5 0.6(0.2-1.7)	S6 0.9(0.3-3.0)
<b>POPs with OR≥1.5 in the 2<sup>nd</sup> quartile in Tables 3 and 4 (in the main manuscript)</b>							
Trans-nonachlor, oxychlordane, mirex, PCB74, PCB146, PCB153, PCB170, PCB178, PCB180, PCB183, PCB187, PCB194, PCB195, PCB199, PCB196_203, PBB 153	Q1 Ref.	Q2 2.0(0.8-4.9)	Q3 0.5(0.2-1.4)	Q4 1.1(0.4-3.1)		P <sub>quadratic</sub> 0.95	P <sup>†</sup> <sub>cubic</sub> <0.01
	S1 Ref.	S2 3.7(1.2-11.6)	S3 2.6(0.8-8.3)	S4 0.9(0.3-3.1)	S5 1.1(0.3-3.7)	S6 1.9(0.5-6.9)	0.52 <0.01
McFarland and Clark groupings							
Group 1B (Mixed-type inducers: PCB105,PCB118,PCB156,PCB170)	S1 Ref.	S2 0.6(0.2-1.8)	S3 1.3(0.4-3.9)	S4 0.6(0.2-1.8)	S5 1.0(0.3-3.2)	S6 0.7(0.2-2.1)	0.89 0.59
Group 2 (Phenobarbital-type inducers: PCB87,PCB99, PCB153, PCB180, PCB183, PCB194)	S1 Ref.	S2 2.9(0.9-9.0)	S3 1.5(0.5-4.5)	S4 0.5(0.2-1.6)	S5 1.0(0.3-3.1)	S6 1.2(0.4-3.9)	0.92 0.01
Group 3 (Weak or noninducers: PCB74, PCB187)	S1 Ref.	S2 0.8(0.3-2.4)	S3 2.8(0.9-8.8)	S4 0.9(0.3-2.8)	S5 0.8(0.2-2.4)	S6 1.2(0.4-3.9)	0.56 0.41
Wolff et al. groupings							
Group 1B (Estrogenic, weak phenobarbital-type inducers, persistent: PCB187)	S1 Ref.	S2 2.6(0.9-7.7)	S3 1.1(0.4-3.4)	S4 1.0(0.3-3.1)	S5 0.4(0.1-1.5)	S6 1.9(0.6-6.6)	0.50 <0.01
Group 2A (Antiestrogenic, immunotoxic, dioxin-like, moderately persistent: PCB74, PCB105, PCB118, PCB156, PCB167)	S1 Ref.	S2 0.7(0.2-2.2)	S3 0.5(0.1-1.4)	S4 0.8(0.3-2.3)	S5 0.7(0.2-2.2)	S6 0.5(0.2-1.7)	0.65 0.39
Group 2B (Antiestrogenic and immunotoxic, dioxin-like, persistent: PCB170)	S1 Ref.	S2 2.5(0.8-7.4)	S3 1.7(0.5-5.3)	S4 1.5(0.4-4.8)	S5 0.7(0.2-2.4)	S6 1.6(0.4-5.5)	0.60 0.03
Group 3 (Phenobarbital-type inducers, persistent: PCB99, PCB153, PCB180, PCB183)	S1 Ref.	S2 1.9(0.6-5.6)	S3 1.4(0.5-4.2)	S4 0.8(0.3-2.5)	S5 0.7(0.2-2.2)	S6 1.3(0.4-4.3)	0.99 0.04

\* : Adjusted for age, sex, race, and BMI at year 2



Supplementary figure 1. Adjusted odds ratios and 95% confidence interval of incident diabetes according to sextiles of the summary measure formed from lipid-standardized serum concentrations of all 31 persistent organic pollutants (POPs) (upper panel) or selected 16 POPs (lower panel, *trans*-nonachlor + oxychlordane + mirex + PBB153 + 12 PCBs) with odds ratios  $\geq 1.5$  in the 2<sup>nd</sup> quartile in Tables 3 and 4 (in the main manuscript). Adjusted for age, sex, race, and BMI at year 2.



Supplementary figure 2. Adjusted odds ratios and 95% confidence interval of incident diabetes according to sextiles of the summary measure formed from lipid-standardized serum concentrations of all 31 persistent organic pollutants (POPs) (upper panel) or selected 16 POPs (lower panel, *trans*-nonachlor + oxychlordane + mirex + PBB153 + 12 PCBs) with odds ratios  $\geq 1.5$  in the 2<sup>nd</sup> quartile in Tables 3 and 4 (in the main manuscript) stratified by year 2 BMI. Adjusted for age, sex, race, and BMI at year 2.